

REMARKS/ARGUMENTS

The Claims:

Claims 3, 14, 15, and 31 have been canceled without prejudice to their future prosecution. These claims are not canceled in response to any statutory rejection and Applicant reserves the right to pursue the subject matter of these claims in a future application. Claims 2 and 29 have been amended merely to correct matters of form. Applicant notes that Claim 2 was amended for clarification purposes to recite the term "DNAzyme". Support for the amendment is found in the original claim and throughout the specification, for example, at page 7, line 15; page 10, lines 26-29, and pages 22-23. No new matter has been added by way of the amendments.

The Office Action:

35 U.S.C. § 103 Rejection

Claims 2-3, 6-9, 14, 29, and 31 were rejected under 35 U.S.C. § 103(a) as being obvious over Yokoyama et al. in view of Joyce et al. (WO 96/17086 A1). The rejection is traversed for the reasons set forth below.

Claims 3, 14, 15, and 31 have been canceled without prejudice. Accordingly, the rejection is moot as to these claims. The present claims are directed to a DNA enzyme (DNAzyme) molecule which specifically cleaves RNA derived from a TERT gene. Thus, to establish a *prima facie* case of obviousness, the Office must show: (1) a teaching or suggestion to cleave an RNA derived from TERT gene using a DNAzyme; and (2) a reasonable expectation of success that the DNAzyme would cleave TERT RNA. The teaching or suggestion to cleave an RNA derived from TERT gene using a DNAzyme and the reasonable expectation of its success must *both* be found in the prior art, and must *not be based on applicant's disclosure*. *In re Vaeck*, 947 F.2d 488 (Fed. Cir. 1991); M.P.E.P. § 2143.

The Office cites Yokoyama et al. for teaching hammerhead ribozymes that target the 5'-end of the hTERT gene. However, Applicant respectfully submits that Yokoyama et al. is not prior art to the instant application. The instant application was filed on

August 31, 2000, claiming the benefit of two provisional applications, USSN 60/151,713, filed August 31, 1999 and USSN 60/197,769, filed March 14, 2000 (see Preliminary Amendment filed on May 11, 2001, amending the specification to include the priority claim, copy attached as Appendix A). Accordingly, the instant application has a priority date of August 31, 1999. The Yokoyama et al. reference was received by the Biochemical and Biophysical Research Communications Journal on May 19, 2000 and was not published until June 24, 2000. Applicant finds no evidence that the Yokoyama et al. reference was publicly available before June 24, 2000 (see Abstract from publishers, attached as Appendix B). Accordingly, Yokoyama et al. is not prior art to the instant application.

In addition, the Office alleges that Joyce et al. teaches the design and synthesis of DNAzymes. However, Joyce et al. merely provides a general description of a class of catalytic DNA molecules and does not even mention the TERT gene, much less suggest using a DNAzyme to cleave a TERT RNA substrate. In the absence of contemplation of TERT RNA as a potential substrate, there simply was no teaching or suggestion in Joyce to design and make DNAzymes targeted to TERT RNA. A general description of DNAzymes does not amount to a teaching or suggestion to make the specific DNAzyme molecules targeted to TERT RNA taught in the present application. Consequently, prior to the disclosure in the instant application, there was no motivation or suggestion to design and make DNAzymes that cleave TERT RNA. Furthermore, in the absence of any teaching whatsoever that a DNAzyme could be used to target and cleave an RNA encoding an TERT gene, one skilled in the art would have no reasonable expectation of success that a DNAzyme would cleave TERT RNA. Thus, it was only through Applicant's disclosure that it became known that a DNAzyme could be used successfully to cleave an RNA encoding TERT.

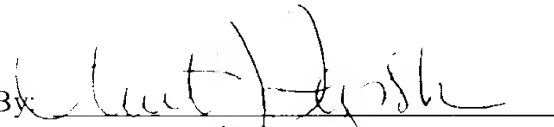
For the reasons set forth above, Joyce does not disclose a DNAzyme that cleaves an RNA derived from a TERT gene and thus does not render the present invention obvious. Accordingly, Applicant requests withdrawal of this rejection.

Conclusion:

In view of the above remarks, the application is considered to be in good and proper form for allowance and the Examiner is respectfully requested to pass this application to issue. If the Examiner believes that a telephone or personal interview would expedite prosecution of the instant application, the Examiner is invited to call the undersigned at (312) 913-0001.

Respectfully Submitted,
McDonnell Boehnen Hulbert & Berghoff

Date: June 17, 2003

By 
Anita Terpstra
Reg. No. 47,132

Appendix A



PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
(MBHB Ref. No. MBHB00-929 (RPI Ref. No. 250/131US))

In re Application of: Chowrira, et al.)
Serial No.: Not Yet Assigned) Group Art Unit: Not Yet Assigned
Filed: August 31, 2000) Examiner: Not Yet Assigned
For: Method and Reagent for the Inhibition)
Of Telomerase Enzyme)

TRANSMITTAL LETTER

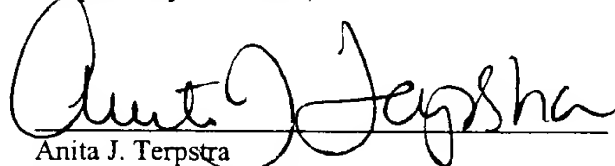
Commissioner for Patents
Washington, D.C. 20231

Dear Sir:

In regard to the above identified application,

1. We are transmitting herewith the attached:
 - a) Preliminary Amendment
 - b) Return Receipt Postcard
2. With respect to fees:
 - a) No fee is required.
 - b) Please charge any underpayment or credit any overpayment our Deposit Account No. 132490.
3. CERTIFICATE OF MAILING UNDER 37 CFR § 1.8: The undersigned hereby certifies that this Transmittal Letter and the paper, as described in paragraph 1, are being deposited with the United States Postal Service with sufficient postage as First Class Mail in an envelope addressed to the Commissioner for Patents, Washington, D.C. 20231 on May 11, 2001.

Respectfully submitted,


Anita J. Terpstra
Registration No. 47,132

Date: May 11, 2001



PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
(Case No. MBHB00,882-C 250/131)

In re Application of:)
)
Chowrira et al.) Group Art Unit: 1651
)
Serial No.: 09/653,225) Examiner: Not Assigned
)
Filed: August 31, 2000)
)
For: **METHOD AND REAGENT FOR THE**)
 INHIBITION OF TELOMERASE)
 ENZYME)

Commissioner of Patents
Washington, D.C. 20231

PRELIMINARY AMENDMENT

Sir:

Applicant respectfully request that this amendment be entered prior to examination of the above-mentioned application on the merits. It is believed that no fee is due for filing this response; however, if a fee is due, the Commissioner is authorized to charge our Deposit Account No. 132490.

IN THE SPECIFICATION:

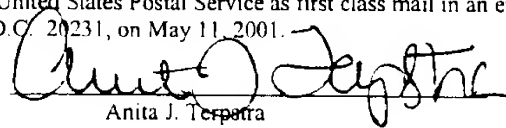
Please insert the following paragraph below the title:

"This patent application claims priority to U.S. provisional application serial number 60/151,713 filed on August 31, 1999, and U.S. provisional application serial number 60/197,769 filed on March 14, 2000. Each of these applications are hereby incorporated by reference herein in their entirety including the drawings."

CERTIFICATE OF MAILING (37 C.F.R. 1.8a)

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to the: Assistant Commissioner for Patents, Washington D.C. 20231, on May 11, 2001.

Date: May 11, 2001


Anita J. Terpstra

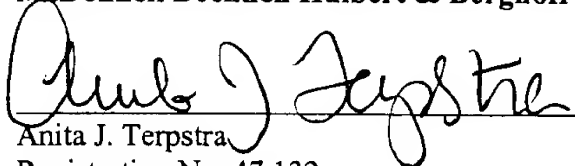
REMARKS

Specification

Applicant respectfully requests that the Specification be amended to include the priority data. If the Examiner has any questions regarding this Preliminary Amendment, the Examiner is invited to call the undersigned attorney.

Respectfully submitted,

McDonnell Boehnen Hulbert & Berghoff


Anita J. Terpstra
Registration No. 47,132

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Hon. Commissioner of Patents and Trademarks
S/N: 09/653,225
Atty: AJT/LJAD
Case No.: MBHB00,882-C 250/131
Re: Applicant - Chowrira, et al.

**METHOD AND REAGENT FOR THE INHIBITION OF TELOMERASE
ENZYME**

Sir:
Please place the Patent Office receipt stamp hereon and mail to acknowledge receipt of:

- ☒ Transmittal Letter
- ☒ Preliminary Amendment

Fee Enclosed: \$ -0-
Date Mailed: May 11, 2001

Respectfully,
McDonnell Boehnen Hulbert & Berghoff
Attorney for Applicant

UNITED STATES PATENT AND TRADEMARK OFFICE

(Case No. MBHB00-882-C; 400/019)

IN THE APPLICATION OF:

Chowrira et al.

Serial No. 09/653,225

Filed: August 31, 2000

Title METHOD AND REAGENT FOR THE
INHIBITION OF TELOMERASE
ENZYME

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Examiner: Epps, Janet L.

Group Art Unit: 1635

Confirmation No.: 4785

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Appendix B**(ABSTRACT FROM PUBLISHERS)**

Appendix B



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Biochemical and Biophysical Research Communications

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doi:10.1006/bbrc.2000.2939 [? Cite or link using doi](#)
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This Document

► **Abstract**

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The 5'-End of hTERT mRNA Is a Good Target for Hammerhead Ribozyme to Suppress Telomerase Activity

Yasuhiro Yokoyama¹, Yuichiro Takahashi, Ariyoshi Shinohara, Xiaoyun Wan, Seiji Takahashi, Kenji Niwa and Teruhiko Tamaya

Department of Obstetrics and Gynecology, Gifu University School of Medicine, 40 Tsukasa-machi, Gifu, 500-8705, Japan

Received 19 May 2000. Available online 27 March 2002.

Abstract

Because the expression level of hTERT, a catalytic subunit of human telomerase, is a rate-limiting determinant of telomerase activity, hTERT mRNA would be an excellent target of hammerhead ribozymes for the regulation of telomerase activity. We studied the efficiency of several hammerhead ribozymes targeting hTERT mRNA by transient and stable transfection procedures. To screen the potency of the ribozymes, transient ribozyme transfection and telomerase determination were performed. The ribozyme targeting 13 nucleotides downstream from the 5'-end of hTERT mRNA (13-ribozyme) exhibited the strongest telomerase-inhibitory activity, and the ribozyme to target 59 nucleotides upstream from the poly(A) tail showed clear activity. A stable transfection study confirmed that the 13-ribozyme suppressed telomerase. These observations suggest that the 13-ribozyme can regulate telomerase activity and may possess potential for cancer therapy.

Author Keywords: hammerhead ribozyme; endometrial carcinoma; transient transfection; catalytic subunit of telomerase; RT-PCR

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yokoyama@cc.gifu-u.ac.jp.

Biochemical and Biophysical Research Communications
Volume 273, Issue 1, 24 June 2000, Pages 316-321

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